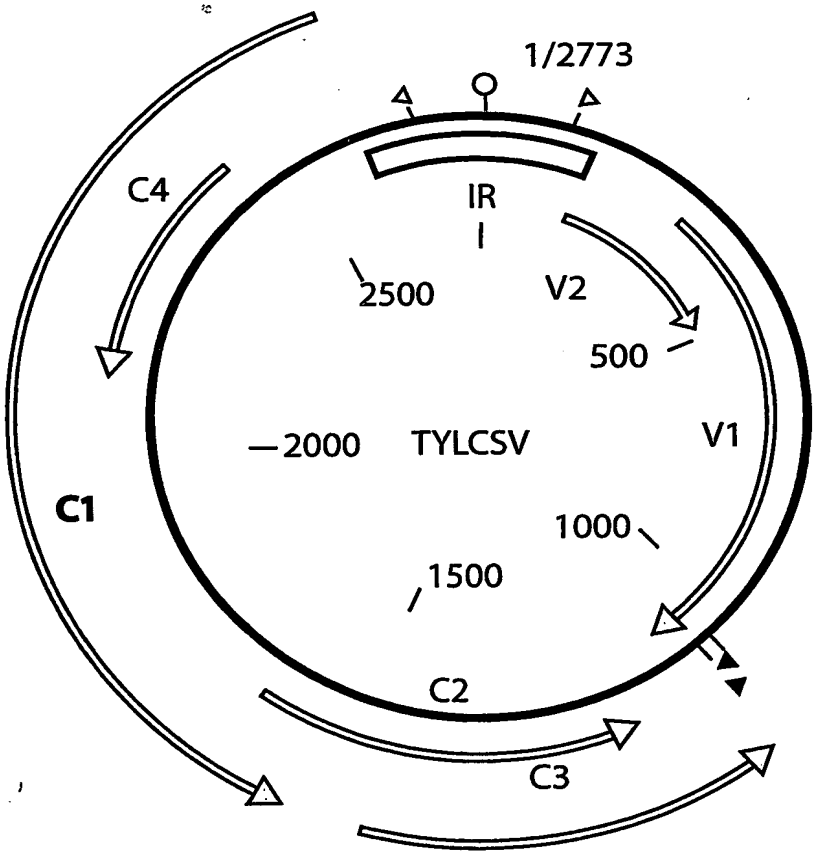

Fig. 1

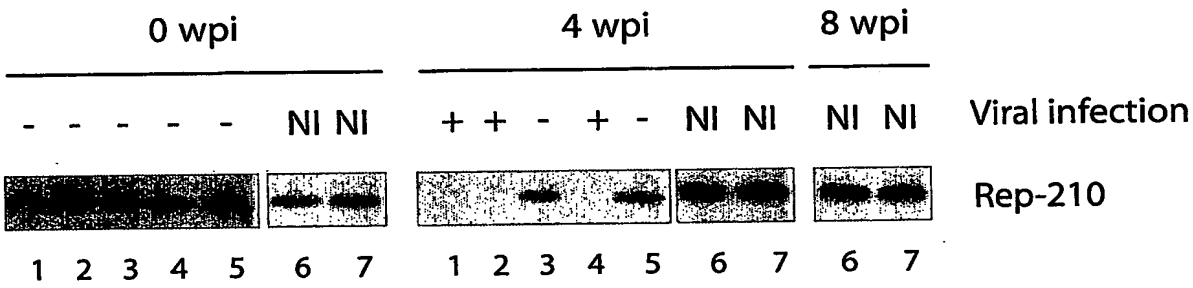
0 wpi
4 wpi
8 wpi
- - - - - NI NI + + - + - NI NI NI NI
Viral infection
Rep-210
1 2 3 4 5 6 7 1 2 3 4 5 6 7 6 7

Fig. 2

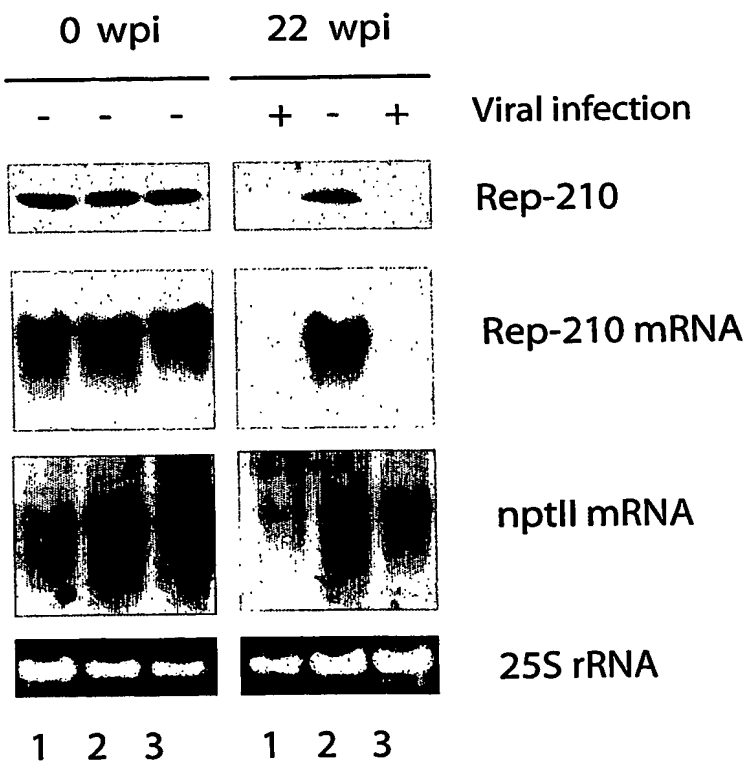
0 wpi
22 wpi
- - - + - +
Viral infection
Rep-210
Rep-210 mRNA
nptII mRNA
25S rRNA
1 2 3 1 2 3

Fig. 3

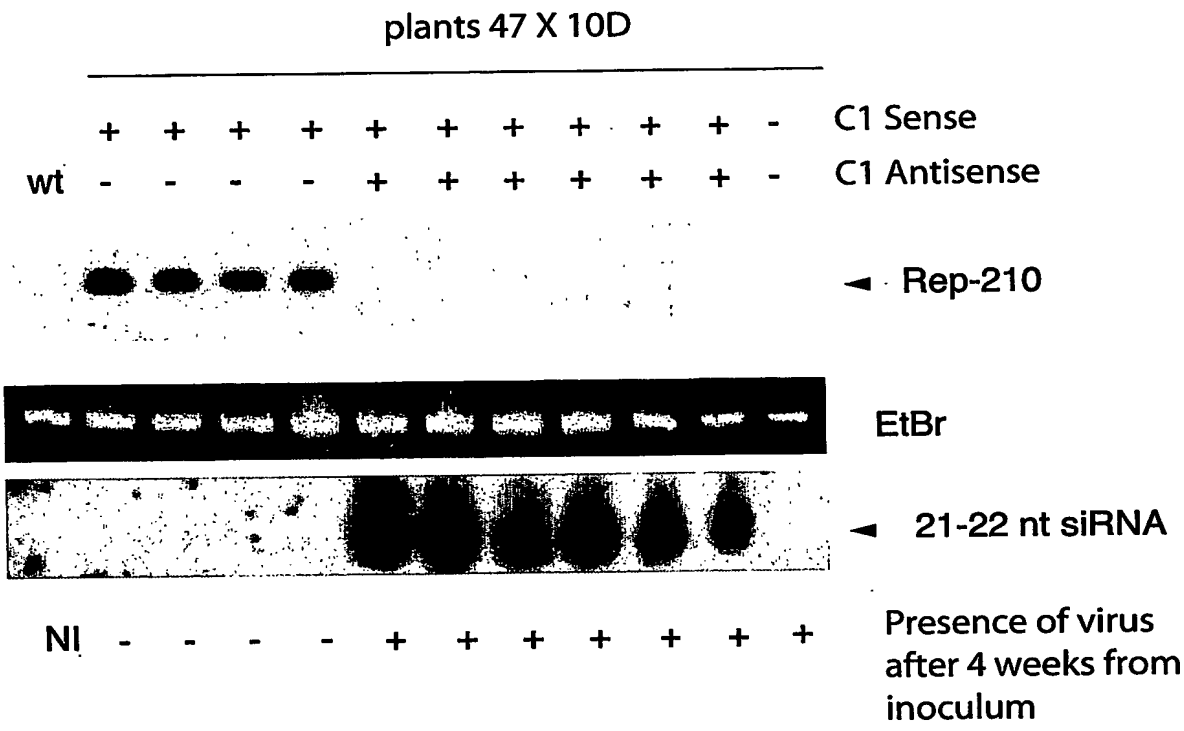
plants 47 X 10D
+ + + + + + + + + + -
C1 Sense
wt - - - - + + + + + + -
C1 Antisense
Rep-210
EtBr
21-22 nt siRNA
NI - - - - + + + + + + +
Presence of virus after 4 weeks from inoculum

Fig. 4

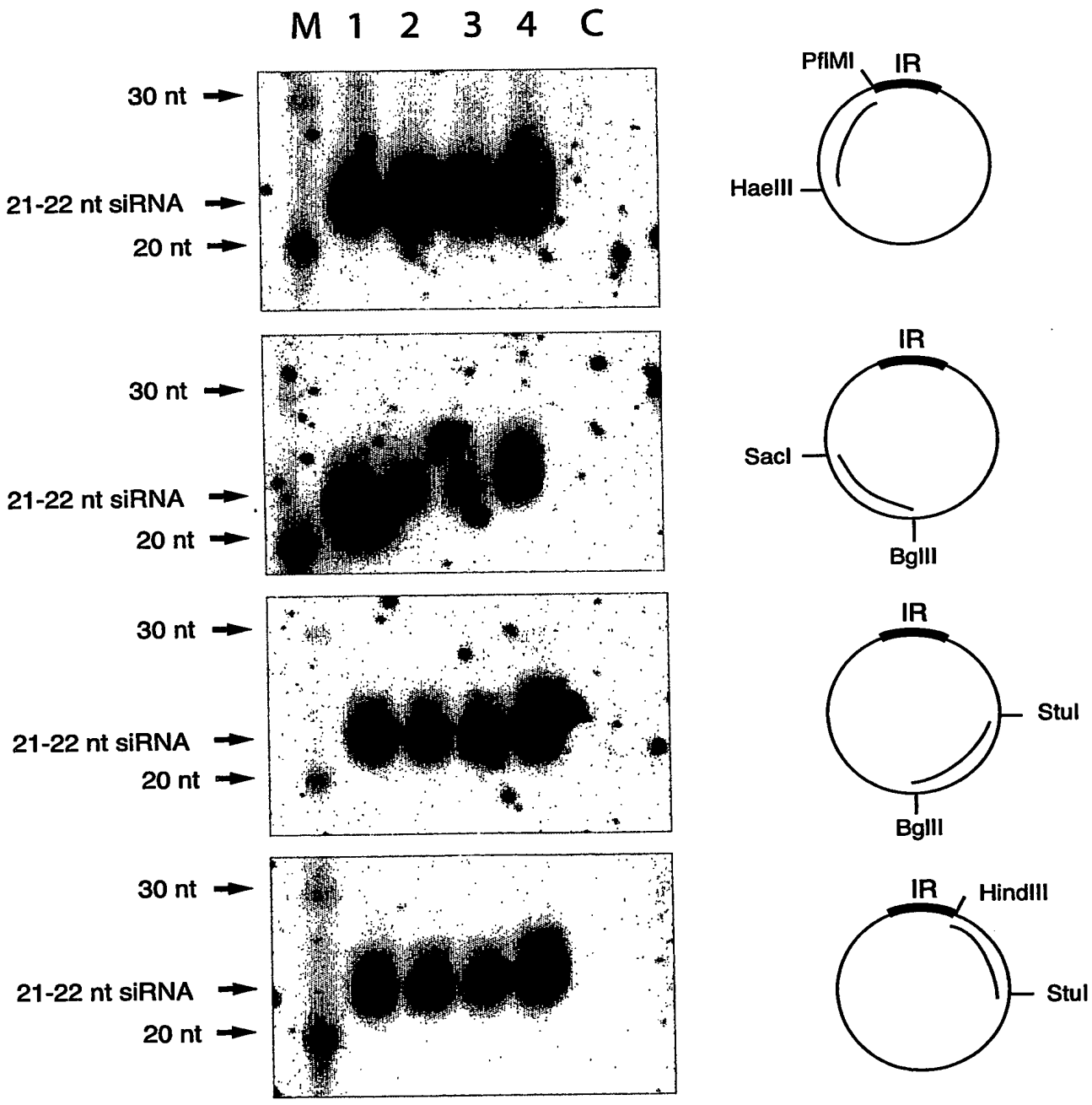
M 1 2 3 4 C
30 nt
21-22 nt siRNA
20 nt
30 nt
21-22 nt siRNA
20 nt
30 nt
21-22 nt siRNA
20 nt
30 nt
21-22 nt siRNA
20 nt
PflMI
IR
HaeIII
IR
SacI
BglII
IR
StuI
BglII
IR
HindIII
StuI

Fig. 5

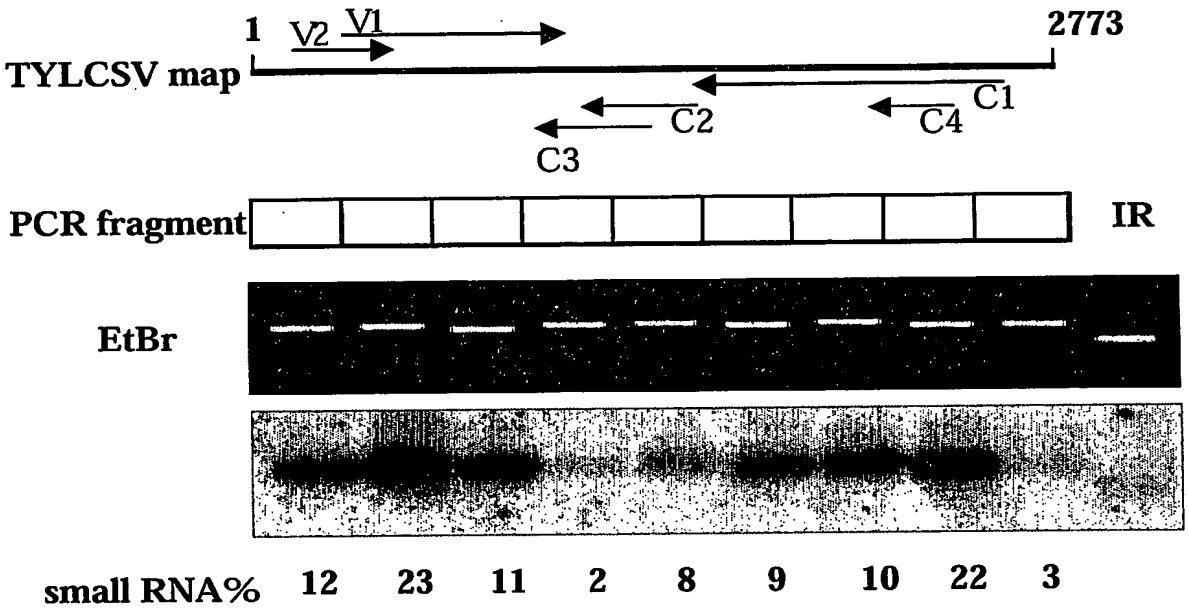
1
V2
V1
2773
TYLCSV map
C1
C2
C4
C3
PCR fragment
IR
EtBr
small RNA%
12
23
11
2
8
9
10
22
3

Fig. 6

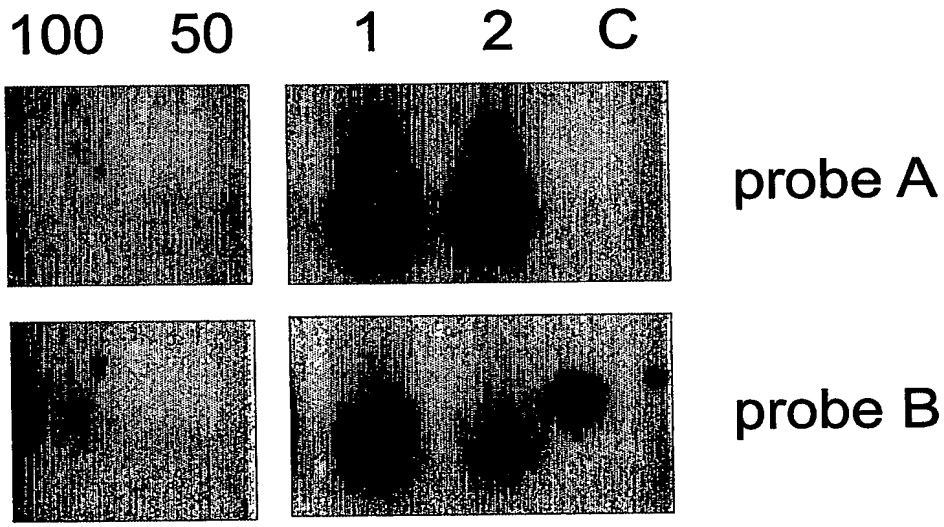

Fig. 7

SEQ ID No 8

GGATCCCCctggatactttgagtgtcccccgattcagaac 40
gacagcaaaa**atg**ccaagatcaggtcgttttagtatcaag 80
gctaaaaattatttccttacatatcccaaatgtgatttaa 120
caaaagaaaatgcactttcccaaataacaaacctacaaac 160
acccacaaacaaattattcatcaaaatttgcagagaacta 200
catgaaaatggggaacctcatctccatatt***t***t***g***atccaat 240
tcgaaggaaaatacaattgtaccaatcaacgattcttcga 280
cctggtatccccaaccaggtcagcacatttccatccgaac 320
attcagggagctaaatcgagctccgacgtcaagtcctata 360
tcgacaaggacggagatgttcttgaatggggtactttcca 400
gatcgacggacgatctgctaggggaggacaacagacagcc 440
tGAATTC 447

Fig. 8


pJTR-
pGEM-P
54
80
120
130
156
181
210
scDNA
ssDNA

Fig. 9

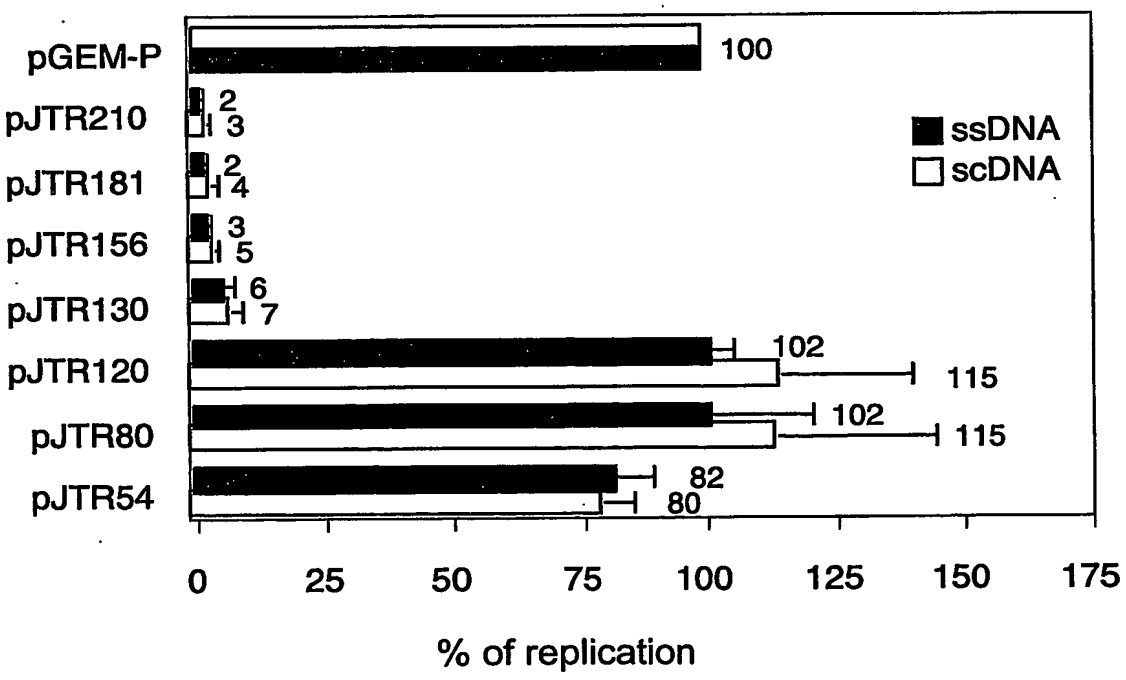
pGEM-P
pJTR210
pJTR181
pJTR156
pJTR130
pJTR120
pJTR80
pJTR54
100
2
3
2
4
3
5
6
7
102
115
102
115
82
80
ssDNA
scDNA
0
25
50
75
100
125
150
175
% of replication

Fig. 10

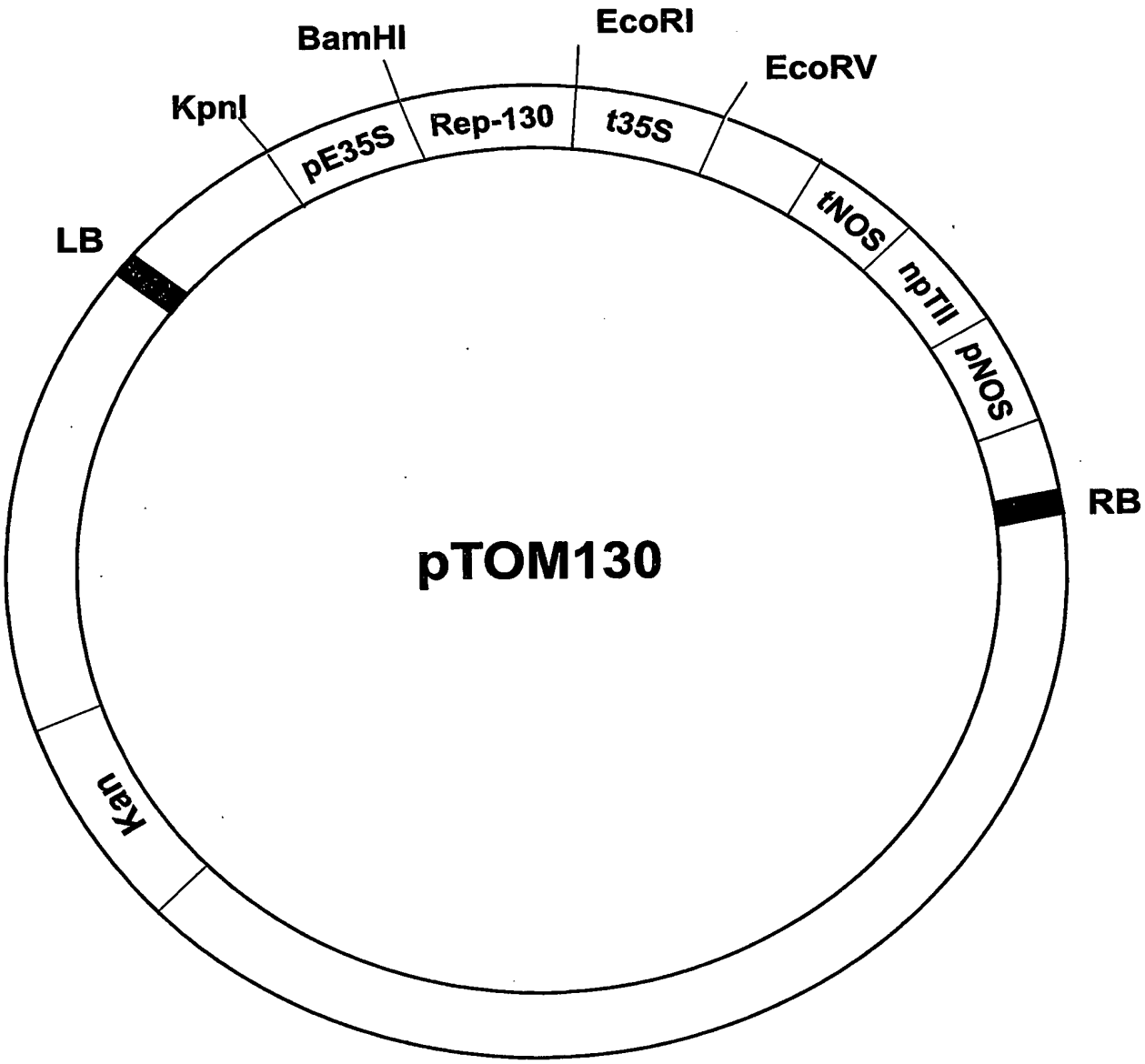
BamHI
EcoRI
EcoRV
KpnI
pE35S
Rep-130
t35S
tNOS
nptII
pNOS
LB
RB
pTOM130
Kan

Fig. 11

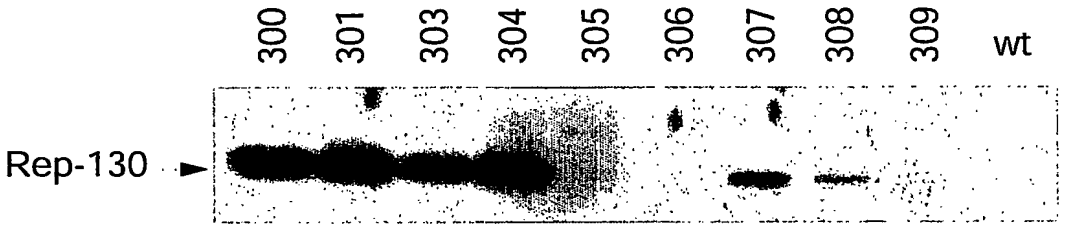
300
301
303
304
305
306
307
308
309
wt
Rep-130

Fig. 12

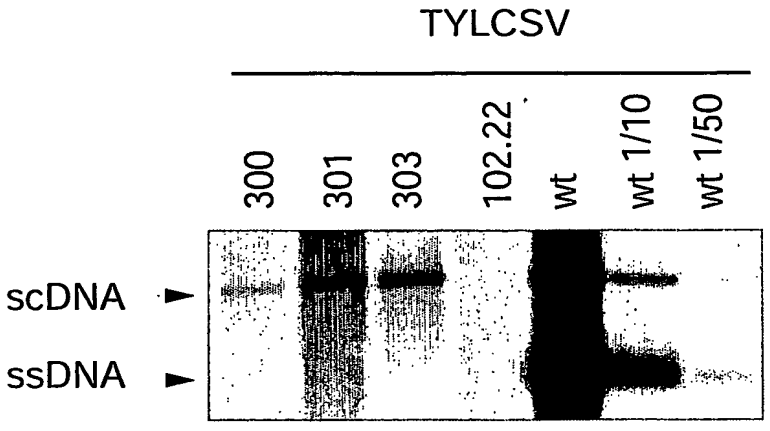
TYLCSV
300
301
303
102.22
wt
wt 1/10
wt 1/50
scDNA
ssDNA

Fig. 13

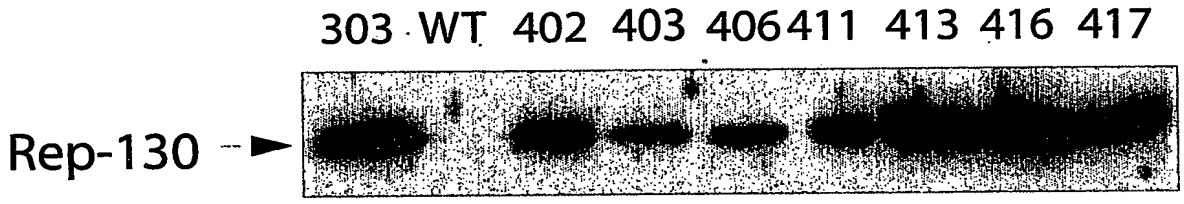

Fig. 14

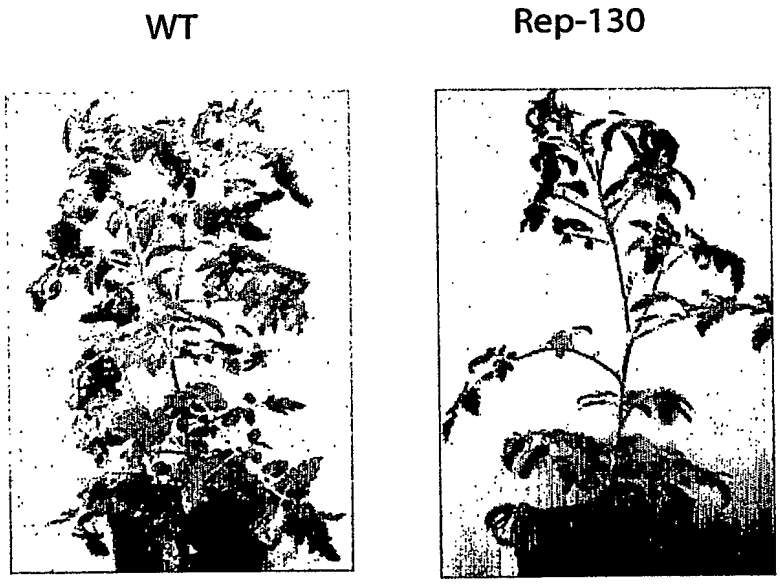

Fig. 15

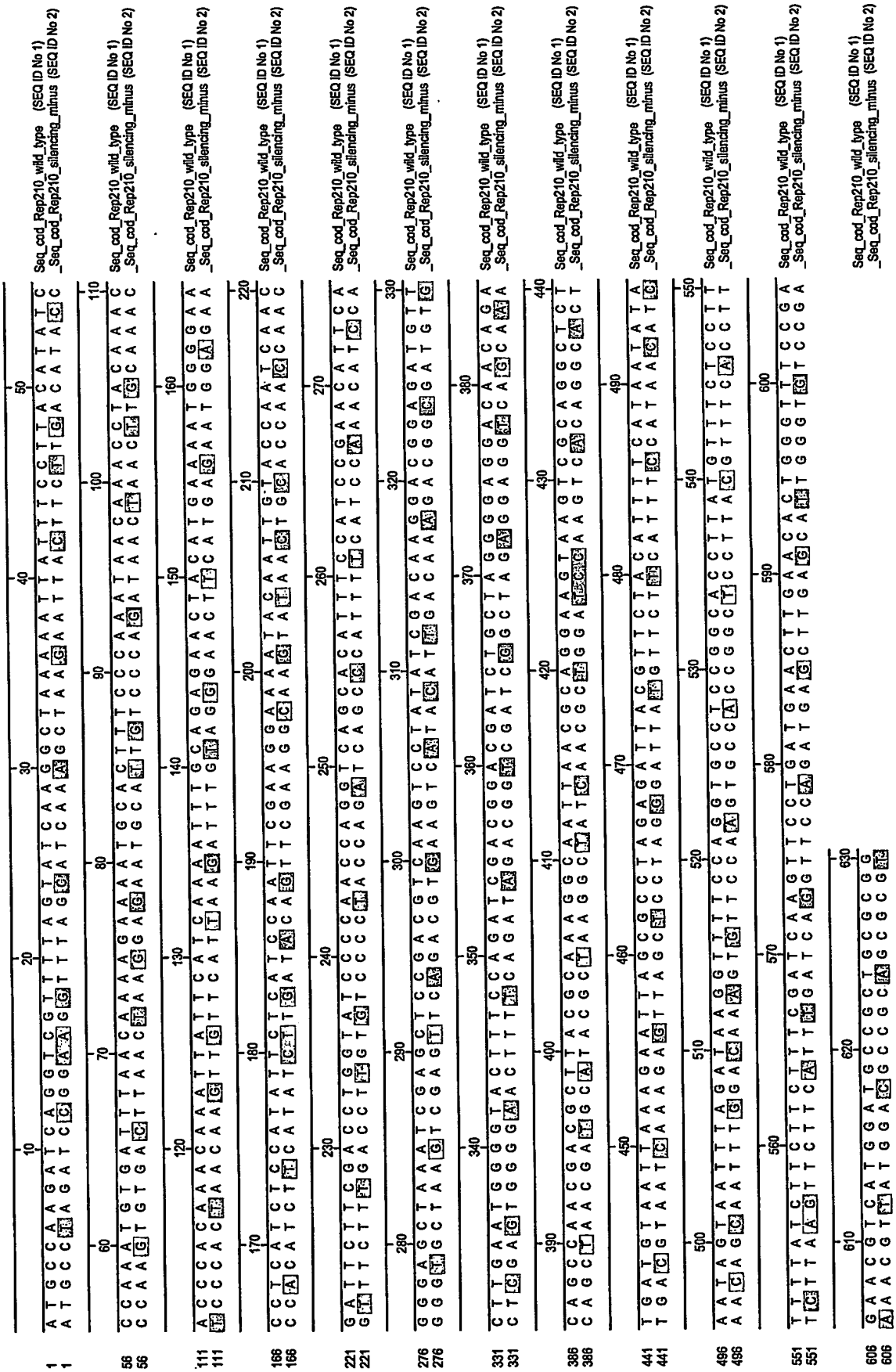
Seq_cod_Rep210_wild_type (SEQ ID No 1)
_Seq_cod_Rep210_silencing_minus (SEQ ID No 2)

Fig. 16A

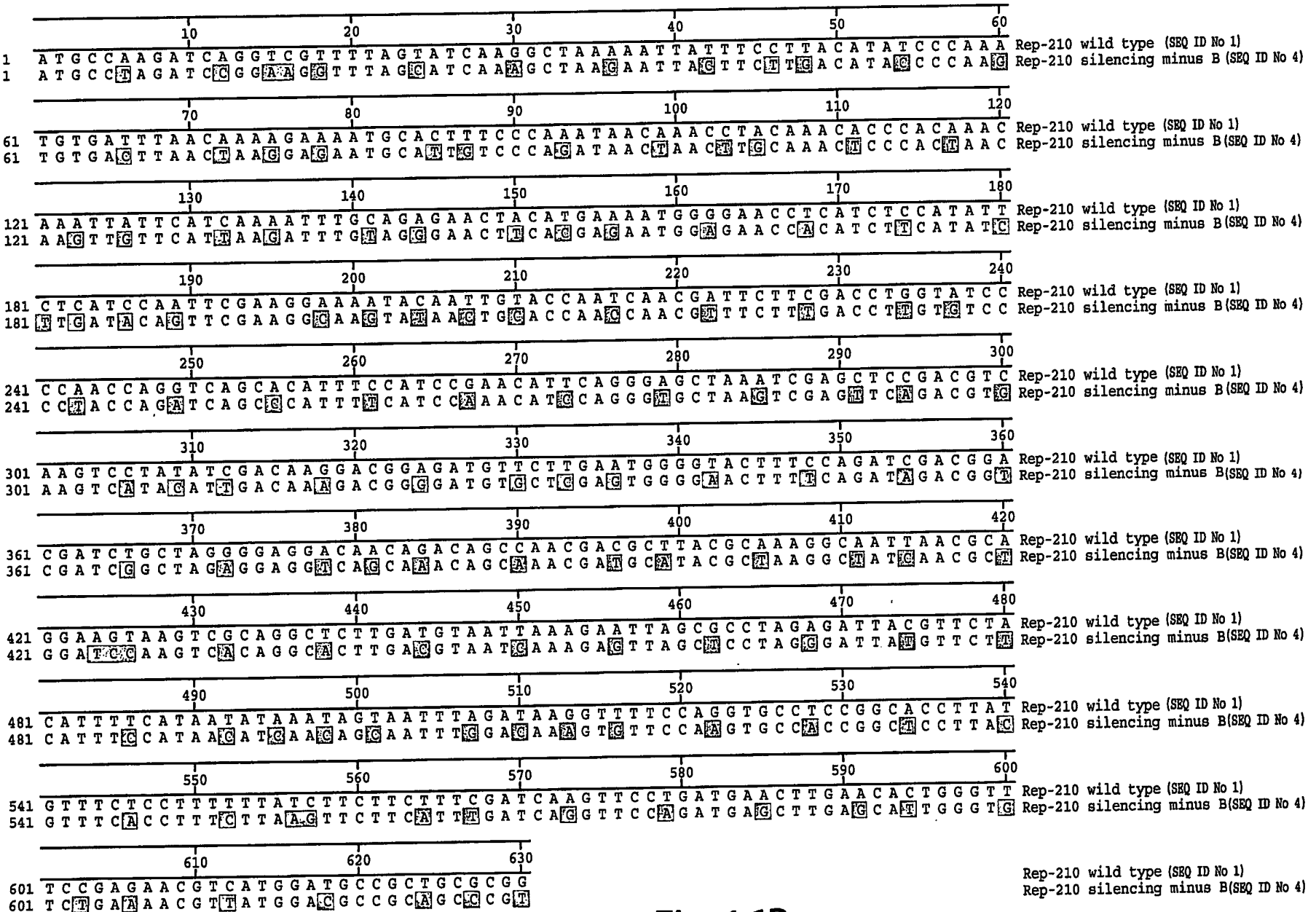
Rep-210 wild type (SEQ ID No 1)
Rep-210 silencing minus B (SEQ ID No 4)

Fig. 16B

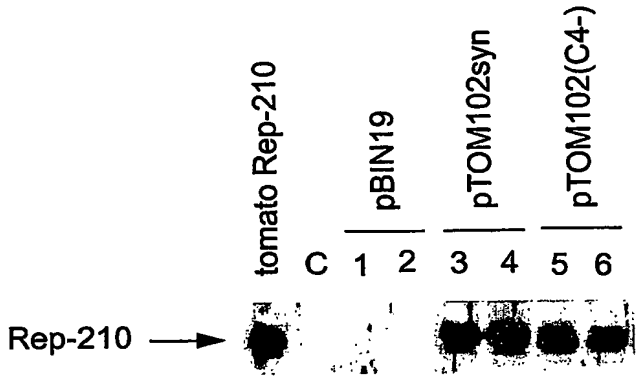
tomato Rep-210
pBIN19
pTOM102syn
pTOM102(C4-)
C 1 2 3 4 5 6
Rep-210

Fig. 17

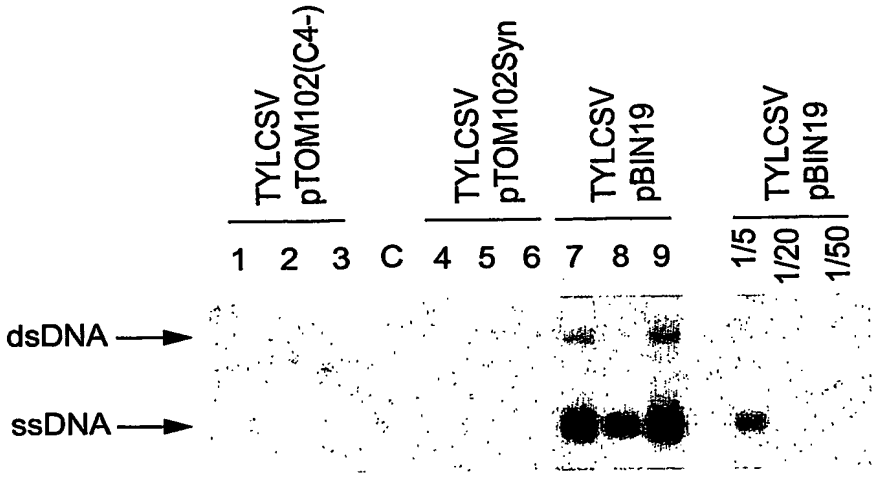
TYLCSV pTOM102(C4-)
TYLCSV pTOM102Syn
TYLCSV pBIN19
TYLCSV pBIN19
1 2 3 C 4 5 6 7 8 9 1/5 1/20 1/50
dsDNA
ssDNA

Fig. 18

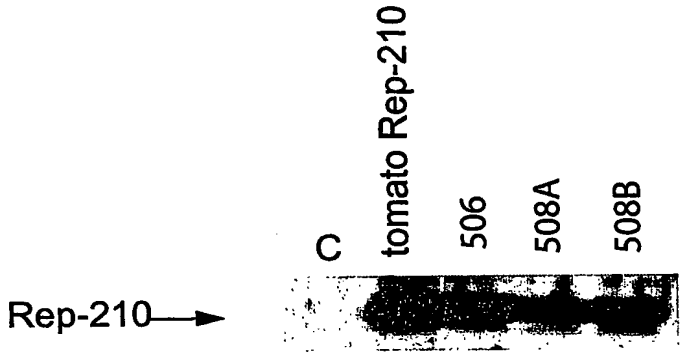

Fig. 19

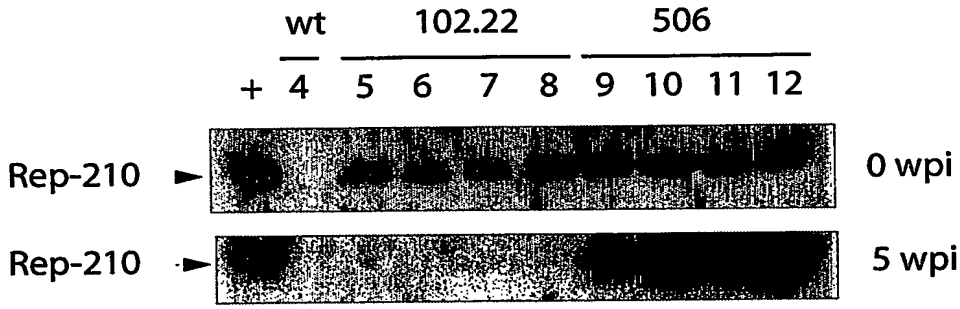

Fig. 20

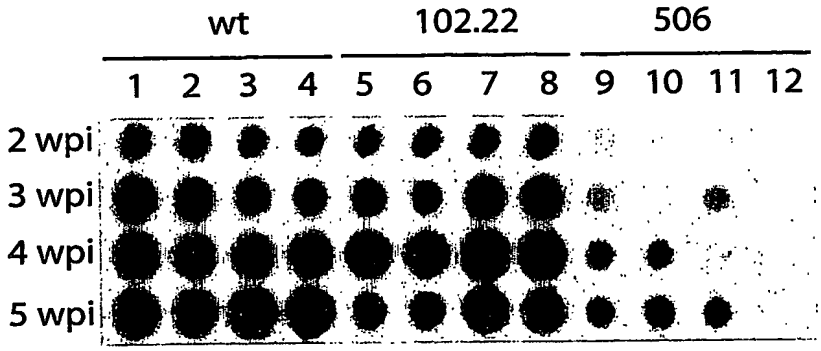

Fig. 21

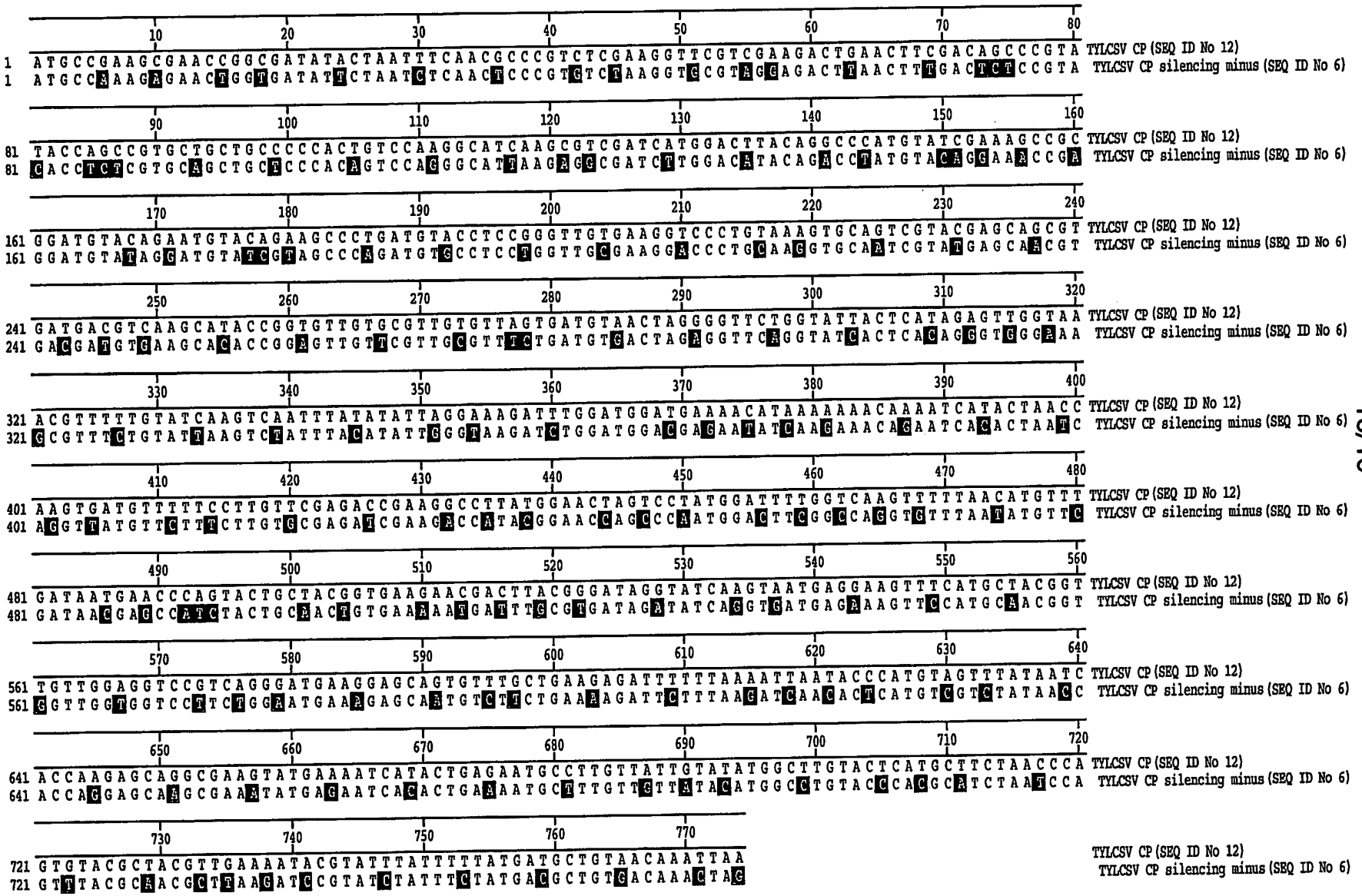
1 ATGCCGAAGCGAACCGGCGATATACTAATTTCAACGCCCGTCTCGAAGGTTCGTCGAAGACTGAACTTCGACAGCCCGTA TYLCSV CP (SEQ ID No 12)
1 ATGCCAAAGAGAACTGGTGATATTCTAATCTCAACTCCCGTGTCTAAGGTCCGTAGCAGACTTAACTTTGACTCTCCGTA TYLCSV CP silencing minus (SEQ ID No 6)
81 TACCAGCCGTGCTGCTGCCCCCACTGTCCAAGGCATCAAGCGTCGATCATGGACTTACAGGCCCATGTATCGAAAGCCGC TYLCSV CP (SEQ ID No 12)
81 CACCTCTCGTGCAGCTGCTCCCACAGTCCAGGGCATTAAGAGGCGATCTTGGACATACAGACCTATGTACAGCAAACCGA TYLCSV CP silencing minus (SEQ ID No 6)
161 GGATGTACAGAATGTACAGAAGCCCTGATGTACCTCCGGGTTGTGAAGGTCCCTGTAAAGTGCAGTCGTACGAGCAGCGT TYLCSV CP (SEQ ID No 12)
161 GGATGTATAGGATGTATCGTAGCCCAGATGTGCCTCCTGGTTGCGAAGGACCCTGCAAGGTGCAATCGTATGAGCACACGT TYLCSV CP silencing minus (SEQ ID No 6)
241 GATGACGTCAAGCATACCGGTGTTGTGCGTTGTGTTAGTGATGTAACTAGGGGTTCTGGTATTACTCATAGAGTTGGTAA TYLCSV CP (SEQ ID No 12)
241 GACGATGTGAAGCACACCGGAGTTGTTCGTTGCGTTTCTGATGTGACTAGAGGTTCAGGTATCACTCACAGGGTGGGAAA TYLCSV CP silencing minus (SEQ ID No 6)
321 ACGTTTTTGTATCAAGTCAATTTATATATTAGGAAAGATTTGGATGGATGAAAACATAAAAAAACAAAATCATACTAACC TYLCSV CP (SEQ ID No 12)
321 GCGTTTCTGTATTAAGTCTATTTACATATTGGGTAAGATCTGGATGGACGAGAATATCAAGAAACAGAATCACACTAATC TYLCSV CP silencing minus (SEQ ID No 6)
401 AAGTGATGTTTTTCCTTGTTCGAGACCGAAGGCCTTATGGAACTAGTCCTATGGATTTTGGTCAAGTTTTTAACATGTTT TYLCSV CP (SEQ ID No 12)
401 AGGTTATGTTCTTTCTTGTGCGAGATCGAAGACCATACGGAACCAGCCCAATGGACTTCGGCCAGGTGTTTAATATGTTC TYLCSV CP silencing minus (SEQ ID No 6)
481 GATAATGAACCCAGTACTGCTACGGTGAAGAACGACTTACGGGATAGGTATCAAGTAATGAGGAAGTTTCATGCTACGGT TYLCSV CP (SEQ ID No 12)
481 GATAACGAGCCATCTACTGCAACTGTGAAAAATGATTTGCGTGATAGATATCAGGTGATGAGAAAGTTCCATGCAACGGT TYLCSV CP silencing minus (SEQ ID No 6)
561 TGTTGGAGGTCCGTCAGGGATGAAGGAGCAGTGTTTGCTGAAGAGATTTTTTAAAATTAATACCCATGTAGTTTATAATC TYLCSV CP (SEQ ID No 12)
561 GGTTGGTGGTCCTTCTGGAATGAAAGAGCAATGTCTTCTGAAAAGATTCTTTAAGATCAACACTCATGTCGTCTATAACC TYLCSV CP silencing minus (SEQ ID No 6)
641 ACCAAGAGCAGGCGAAGTATGAAAATCATACTGAGAATGCCTTGTTATTGTATATGGCTTGTACTCATGCTTCTAACCCA TYLCSV CP (SEQ ID No 12)
641 ACCAGGAGCAAGCGAAATATGAGAATCACACTGAAAATGCTTTGTTGTTATACATGGCCTGTACCCACGCATCTAATCCA TYLCSV CP silencing minus (SEQ ID No 6)
721 GTGTACGCTACGTTGAAAATACGTATTTATTTTTATGATGCTGTAACAAATTAA TYLCSV CP (SEQ ID No 12)
721 GTTTACGCAACGCTTAAGATCCGTATCTATTTCTATGACGCTGTGACAAACTAG TYLCSV CP silencing minus (SEQ ID No 6)

Fig. 22